

# The Plants That Followed People

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## Plant Introduction

**I**magine going shopping for fresh vegetables and finding only blueberries, cranberries, nuts, and sunflower from which to choose. These were the native food crops available to the North American Indians.

Human beings have been moving plants from one place to another since the beginning of time. The first recorded plant collection was made by Queen Hatshepsut of Egypt in 1500 B.C.

Centuries ago Indians from Mexico and southward migrated north, bringing corn and other crops. In the early days of this country, immigrants brought seed from their homeland, and suddenly barley from England and Germany stood side by side on the farmstead. Ship captains brought seed from far-flung parts and Spanish missions introduced arid land crops to the Southwest.

The systematic introduction and distribution of foreign plants began in 1898, when the Department of Agriculture (USDA) established an office on seed and plant introduction. Since the first introduction of cabbage from

Russia, almost a half million samples have been officially introduced. Today, the National Plant Germplasm System continues this work of introducing, evaluating, and preserving valuable germplasm for diverse uses. In addition, USDA's Soil Conservation Service has acquired foreign plants useful in soil conservation. Universities, private arboretums, and individuals also have introduced foreign plant material in their work. Unfortunately, unplanned and illegal introductions frequently have caused major and often continuing problems.

## Field Crops

Familiar field crops such as wheat, rice, barley, oats, rye, and buckwheat were introduced by early settlers. Today, introduced cereal crops, including corn, provide about 20 percent of the food energy, 20 percent protein, 36 percent carbohydrates, 38 percent iron and a high percentage of the vitamins thiamin, riboflavin, and niacin in our daily diets.

**Rice.** Experimental rice plantings were made in Virginia as early as 1609, and by 1690, were well established in



*Workers cultivate rice on a plantation near Savannah, Georgia, in 1867. Rice is still a popular crop in southeastern States, particularly Louisiana. (Library of Congress, LC-USZ62-93554, sketch by A.R. Waud from Harper's Weekly)*

South Carolina. The principal rice-growing areas were located in the southeastern States for more than 200 years. Now, most of the acreage is concentrated in Arkansas, Louisiana, Mississippi, Texas, and California. The United States has become a leading exporter of rice grain.

**Wheat.** This ancient crop of Middle East origin has been important in the Western Hemisphere for more than 400 years. Apparently, Christopher Columbus brought both wheat and barley to the West Indies in 1494 and perhaps in 1492 as well. Since these crops failed, it remained for later settlers to establish them.

Early diversity of origins greatly speeded up the successful adaptation

and production of soft, hard, and durum types of spring and winter wheat.

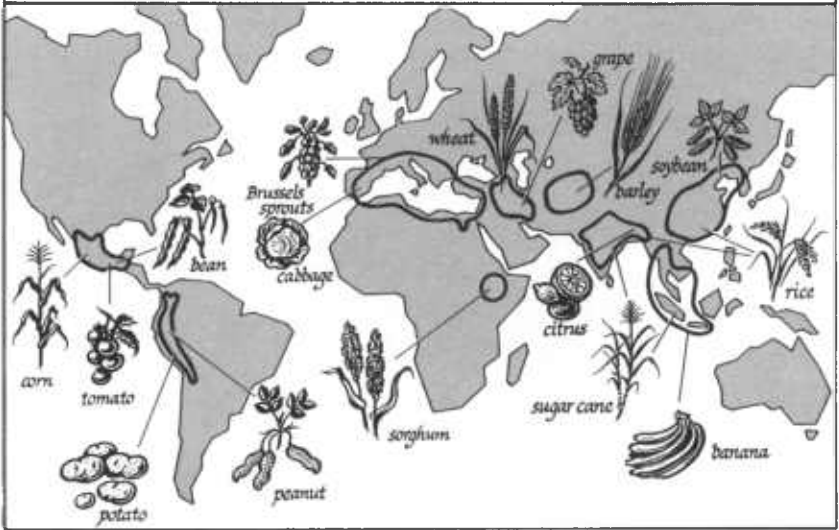
**Soybeans.** Soybean production now exceeds 2 billion bushels from 59 million acres with a value of \$10 billion. This crop of major economic significance was first introduced into Georgia in 1765. By 1898, no more than eight varieties were cultivated.

### Forages

A significant portion of cleared land was reserved by the settlers as grazing lands for their domestic stocks. Forages common to northern Europe were quickly introduced.

Alfalfa may have been first introduced in Mexico about 1736, to

### Plants Introduced into the United States



become well established in the southwestern United States after 1836. Called the "Queen Of The Forages," it is grown in nearly every State.

Tall fescue was probably introduced much earlier but only came into widespread use in the 1940's, resulting from the multiplication of the variety, *Kentucky 31*, found in a naturalized stand on a Kentucky farm in 1931.

In the humid south where the cool season grasses were less well adapted, bermudagrass and others were introduced from Africa and India.

As settlers moved onto the Great Plains, they encountered first significant amounts of native grazable forage. These grasses represented the climax vegetation, but were fragile, and after decades of overgrazing, much of the area not plowed was invaded by introduced grasses, which

were better adapted to intensive grazing. The principal invaders were Kentucky bluegrass and smooth brome.

Several well-adapted varieties of wheatgrasses from the Middle East, and buffelgrass, lovegrass and klein-grass from Africa, are widely used in the Rocky Mountains and Southwest.

The impact of introduced grasses and legumes on this American land far exceeds their value as forages. Except for the Great Plains, native grasses and legumes with broad adaptation are limited. The greatest long-term contribution of introduced forages may be for revegetating degraded farmland or rangeland and for soil stabilizing and building processes.

### Conservation Plants

USDA, recognizing the need for specialized vegetation to combat wind and water erosion, conducts a world-



*With the introduction of valuable landraces from China, Japan, Korea, and the U.S.S.R. in the early 1900's, soybeans became profitable to produce. Here, a farmer harvests soybeans in southwest Iowa. (Tim McCabe, SCS, IA-2859)*

wide search for conservation plants. Many foreign plants have proved well adapted to U.S. climates. Some are better adapted than native plants for solving erosion problems.

Currently, about 78 varieties of conservation plants developed from germplasm of foreign origin are produced commercially.

Crownvetch, introduced from Northern Europe, is better adapted for stabilizing denuded slopes in the eastern United States than native ground covers and has been planted on thousands of miles of roadbanks.

Many important wildlife species depend on introduced plants for food. For instance, grain sorghum and other cultivated crops are important in the

diet of ringnecked pheasants. Two annual lespedezas from Southeast Asia are a principal food for bobwhite quail.

### Ornamentals

Half of the top flowering trees used in the landscape trade, including crab-apple, Callery pear, saucer magnolia, golden rain tree and flowering cherry, were introduced.

Many favorite flowers also were introduced. Chrysanthemums came from China and Japan, carnations from Asia, tulips from southwestern Europe and the Near East, and poinsettias from Central America. The commonly used Japanese yews, many evergreen azaleas, tea and floribunda

roses, are all gifts of foreign lands. Further, about 20 percent of the landscape trade in the southwestern United States consists of plants from Australia and other arid lands. These plants provide diversity and help in water conservation.

### Safeguards

Foreign plants should not be so well adapted to climatic niches that they replace native vegetation or become weeds competing with agricultural crops. A \$7.5 billion price tag is the estimated annual yield loss for 64 crops caused by weeds.

Most serious weeds were accidentally introduced by contaminants in crop seeds, seeds in ship ballast and packing materials, in hay and other feedstuffs, and even seeds in the wool and fur of introduced animals. Most of these introductions took place during early U.S. history.

Kudzu was introduced because of its potential value for hay and usefulness in soil conservation. Unfortunately, its aggressive spreading tendencies proved to greatly outweigh its positive characteristics.

Today, safeguards help protect against pest plants. The Noxious Weed

Act rigidly controls the introduction and interstate movement of plant species considered a threat to agriculture and waterways. Quarantine regulations apply to plant species that might harbor exotic diseases, viruses, and insects.

Since a wide range of plant species is needed for agricultural research, procedures with built-in safeguards have been developed for importing restricted materials. Most vegetative introductions of apples, pears, peaches, and citrus must be virus-indexed before used for planting and research purposes. Corn, sorghum, and pearl millet seed from Africa and Asia must be grown under controlled greenhouse conditions before field growout is allowed.

### Searching and Preserving

Worldwide interest in germplasm exchange has increased dramatically. Its value to all people is widely recognized, and the search for and exchange and preservation of germplasm must continue. This is possible only in a reasoned, cooperative atmosphere, in which all peoples of the world can share in these global resources.